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Exploring Teachers' Assessment Literacy: Impact on Learners' Writing Achievements and Implications for Teacher Development

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Abstract: Teacher-mediated classroom assessment might have significant impacts on learners' academic achievements and teachers' development. The current study investigated teachers' assessment literacy and its impact on their current assessment practices and learners' writing outcomes. The study sought to gain an understanding of the extent to which teachers' assessment literacy affects their practices and their learners' outcomes. To conduct the study and gather the required data, the researchers employed teachers' assessment literacy inventory, semi-structured interview, non-participatory observation, and Writing Competence Rating Scale (WCRS). Ten male EFL instructors and 75 male sophomores from Iranian EFL contexts were selected from four language schools in Iran. The results of the study indicated that teachers' assessment literacy has a statistically significant impact on learners' writing achievements and teachers' assessment awareness leads teaching environments into effective and motivated assessment design. These findings suggest language educators considering teachers' assessment awareness in their teacher education programs.

Introduction

There are many contributing factors to set an effective educational environment; among which teacher knowledge is perhaps the central factor. Teachers and their knowledge play different roles in the multifaceted process of language teaching. One aspect of the teacher knowledge is how to assess learners' abilities or assessment literacy. Nowadays, many schools or colleges are equipped with modern educational apparatuses, but if teachers do not have the required knowledge to organize the classroom assessment for promoting the learning process, all the materials and classrooms lose their values (Al-Malki & Weir, 2014; Susuwele-Banda, 2005). Teachers' Assessment Literacy (AL) might influence their practices and syllabuses. Mertler (2003) defined assessment literacy as the possession of knowledge about the basic principles of assessment and evaluation practice which are the terminology of assessment concepts such as test, measurement, assessment and evaluation, the development and use of assessment methodologies and techniques in the classroom, familiarity with different tools and apparatus of language assessment, familiarity with standards of quality in classroom assessment, and familiarity with an alternative to traditional measurements of learning. In other words,

assessment literacy is the readiness of a teacher to design, implement, and discuss the assessment strategies, measurement tools, evaluation criteria, decision making milestones as well as formative and summative tests.

Proper assessment procedure in the classroom plays a vital role in ensuring the fact that learners are meeting instructional goals. Like other educational systems, the current Iranian education system demands that teachers have a command of different forms of classroom assessment. Specifically, teachers need to be able to create and implement valid and reliable assessments in order to measure learners' learning and determine the effectiveness of their teaching. In addition, teachers need to be able to discuss the results of their classroom assessments with learners and their parents, and use the results of their assessments to regulate more appropriate educational instruction (Alkharusi, Kazem, & Al-Musawai, 2011; Bastian, Henry, Pan, & Lys, 2016; Beziat & Coleman, 2015). It implies from the literature that many Iranian teachers overlook the educational and classroom assessment in their classrooms. For these teachers, the only exposure to the concepts and practices of classroom assessment and other kinds of assessment might have been a few sessions in their teacher-education programs in which they focus on the theoretical foundations of the concept of assessment. This overlook is mostly because of inappropriate practical tasks and projects in their education programs. Moreover, they might not feel the necessity to acquire assessment knowledge which eventuates in low assessment literacy (Karimi & Shafee, 2014; Razavipour, Riazi, & Rashidi, 2011). Some teachers usually arrive at their first teaching experience and assignment without any primary and fundamental understanding of the notions of educational and classroom assessment. In addition, nowadays, with the advancement of modern educational apparatuses and modifications in educational curriculum, content, and instruction, there has been an increase in expectations regarding teachers' assessment expertise. Therefore, it is required that teachers and instructors develop classroom assessments that align new curriculums with accepted standards as a means of improving learner' abilities, tests' qualities, and test scores' interpretations (Dayal & Lingam, 2015; Mertler, 2003).

Employing adequate assessment techniques and grading practices, teachers can improve their instruction, enhance learners' motivation to learn, and increase learners' levels of achievement. Classroom assessment can be used for different objectives which include addressing the learners' needs, assigning learners in homogeneous groups- on the part of their language proficiency for their next educational levels, evaluating learners and instruction, motivating learners, and so on (Mertler, 2003; Dinther, Dochy, & Segers, 2015). There are many considerations towards the major classifications of assessment which divides it into summative and formative assessments. Many researchers have found numerous teachers who claimed that their learners' achievements were not adequate at the end of the educational term. In addition, teachers need to make crucial instructional decisions and summative or once-a-year tests are not adequate in providing teachers with the moment-to-moment and day-to-day information about learners' achievements (Ogan-Bekiroglu & Suzuk, 2014; Beziat & Coleman, 2015; Zhang, Cown, Hayes, Werry, Barnes, France, & TeHau-Grant, 2015). The problem is that teachers are unable to gather or use dependable information on learners' achievements due to the extensive materials in which they have no control over them and that they have to cover for summative or once-a-year tests. This problem is highlighted especially in some educational systems such as Payame Noor educational system in Iran. In this educational system, teachers have to cover fixed textbooks and instructions, as well as follow the standardized final tests in which are also beyond their control (Karimi & Shafee, 2014).

In contrast to summative assessment, formative assessment is a process in which teachers have control over both content and assessment procedure. They can adjust their ongoing instructional activities according to classroom-based evidence. In this kind of assessment, learners just like teachers have an active role in selecting classrooms' activities and subsequent assessment procedure. In other words, teachers are able to set their educational instructions fit to the immediate environment, available materials, and learners' specific needs (Stiggins, 2006; Lingam & Lingam, 2016). Formative assessment causes a powerful improvement in the instruction, because it is intended to stimulate adjustments in teachers' flexible instructional programs or in learners' current learning-tactics. One aspect of formative assessment is that teachers frequently administer classroom tests and quizzes, not for grading purposes (MacLellan, 2004), but to let the teachers and the learners perceive whether they need to make any changes in what they are studying in classroom or not. The main function of the formative assessment process is to supply effective and practical evidence that will enhance learners' achievements (Popham, 2009; Tong & Adamson, 2015). Assessment for formative purposes is an integral part of any teaching program which includes practices such as effective teacher questioning, use of success criteria, feedback, observation, conferencing, and student self-assessment (Yan & Cheng, 2015).

Ironically, in this age of increase in emphasis on assessment, many universities and state education agencies do not require pre-service teachers to complete specific coursework about classroom assessment. This continues to be an interesting phenomenon, since many in-service teachers report that they are not well prepared to assess students' learning. Furthermore, teachers from different countries and different educational systems often claim that lack of adequate preparation is largely due to inadequate pre-service training in the area of educational measurement; thus, it is worth pondering over it internationally and shedding light on its latent aspects which can influence the whole process of education, particularly language teaching (Campbell, Murphy, & Holt, 2002; Mertler, 2003; Verberg, Tigelaar, & Verloop, 2015). Mertler (2003) also cited literature that calls for an increase in emphasis on teacher preparation programs for classroom assessment and a decrease in emphasis on summative testing. Studies have generally concluded that teachers' skills in both areas are limited. In other words, their assessment literacy is limited. Despite the importance of assessment training course, many teachers and instructors start their teaching career without adequate ability in measuring learners' abilities and appropriate evaluation of educational instructions. Ordinarily, teachers have to follow fixed state educational instructions that limit them just to deliver the previously designed materials to the learners. However, they have the ability to evaluate their teaching instructions and materials. In other words, in spite of the fact that teachers have no control over the content, they can modify the assessment procedure and evaluate their learners' ability more effectively. Moreover, there might be differences between teachers who have high level of assessment literacy in their classroom management and those who do not; therefore, the current study investigated teachers' assessment literacy and its impacts on their current assessment practices and learners' writing achievements.

Review of Literature

For the past several years, assessment literacy has increasingly attracted the attention of researchers as a significant point for teacher professional development programs (Beziat &

Coleman, 2015). In addition, the emergence of increased pre-service and in-service programs has been offered teacher education programs deeper insights considering educational assessment (Mertler, 2003; Alkharusi et al., 2011; Xu & Brown, 2016). Stiggins (2006) stated that an unacceptably low level of assessment literacy is observed among teachers and instructors in our schools and universities which resulted in inaccurate assessment of learners' abilities and caused their failure to reach their full potential. Many teachers are left unprepared to assess learners' development as a result of both inadequate pre-service and in-service training, so they have to acquire assessment skills while they are on the job (Mertler, 2003). Some researchers believe that teachers do better assessment practices at classroom-based measurements than at interpreting standardized tests, probably due to the nature of their work in the classrooms (Conor & Mbaye, 2002). Stiggins (2006) stated that the standardized tests are the tests which are provided by officials in educational systems. Teachers do not have any control over the contents of such tests and they have to teach for these tests (Xu & Brown, 2016). Moreover, lack of expertise in test construction, teachers do not use valid evaluation procedures (Yan & Cheng, 2015).

Despite an emphasis being placed on classroom assessment over a number of years, evidence suggests insufficiencies in classroom assessment literacy among teachers. Research in many countries has demonstrated that many teachers are inadequately trained and ill-prepared to develop, administer and interpret the results of different types of assessment. In other words, the literature has revealed that teachers have difficulties in test development, administration, and interpretation. Teachers might have difficulty with common assessment responsibilities, basic conceptions and purposes of assessment, and validity and reliability of assessment (Gotch, 2012). Evaluation of their activities has demonstrated that they can produce rubrics of average quality; however, do not demonstrate best practices or clear connections between instruction and assessment (Maclellan, 2004). Teachers' perceptions of their own assessment competencies could be generally high, although they acknowledged that certain assessment practices such as test construction can be complex and confusing, even for those who have the requisite skills (Scott, Webber, Aitken, & Lupart, 2011; Al-Malki & Weir, 2014). Generally, teachers who were less prepared and less skilled in developing authentic assessments, perceived new kinds of assessments to be more difficult to develop than traditional paper-and-pencil tests (William & Thompson, 2008). Furthermore, teachers' assessment practices have been often not well associated with their instructional goals and had not a tendency to insist on a high degree of meaningful learning. Although tests seem to be popular in schools, teachers seem to have different skills and views about tests. This suggests that novice teachers sometimes fail to make sense of learners' work, resulting in failure to understand the learners' learning difficulties. Tong and Adamson (2015) suggested that more effort should be devoted to exploring how prospective teachers' programs could improve teachers' knowledge of learners' ways of thinking. Susuwele-Banda (2005) found that teachers were mostly interested in assessing learners' mastery or outcome and that performance-based evaluation was used frequently. He reported that most middle and high school teachers use teacher-constructed tests to assess learners' achievement. In addition, he stated that most teachers consider classroom assessment as a necessary equipment for their teaching and not as a tool to improve their teaching. He also claimed that despite their interest in assessing learners' outcomes, teachers' abilities to analyze the reasoning behind learners' responses were ineffective. In contrast to Susuwele-Banda (2005), a number of studies found that teachers disliked tests, believing that the tests caused undue stress and fatigue on their learners (Gotch, 2012; Dayal & Lingam, 2015; Dinther et al., 2015).

Mostly, teachers were found not to be good judges of the quality of their own assessment activities as well as their students' abilities (Bastian et al., 2016; Clark-Gareca, 2016). McMillan (2001) stated that different teachers interpreted similar learners' work differently. He investigated the actual classroom assessment and grading practices of secondary school teachers in relation to specific class and determined that there is a meaningful relationship among the teacher's assessment practices, grade level, subject matter, and ability levels of learners. About the efficacy of the evaluation itself, teachers are generally opposed to announcements which declare testing helps school improvement and gives appropriate feedback. To a certain extent, they considered evaluation as a source of stress for both teachers and learners. Teachers in schools employ the stated experience from the community to raise and improve their test scores (Susuwele-Banda, 2005; Karimi & Shafee, 2014; Lingam & Lingam, 2016).

Recent studies have revealed some challenging issues in implementing effective formative practice which were overlooked in many programs; challenges such as the complex structure of assessment and its critical aspects (Furtak, Ruiz-Primo, Shemwell, Ayala, Brandon, & Shavelson, 2008), student voices and their perceptions about assessment programs (Tong & Adamson, 2015), limited negotiation within the context of the formative assessment (Verberg et al., 2015), teacher substantial knowledge and rooting formative assessment in pedagogical skills (Bennett, 2011; Herman, Osmundson, Dai, Ringstaff, & Timms, 2015), and a conceptual framework of teacher assessment literacy in practice (Xu & Brown, 2016). Bennett (2011) stated that teacher's lack of substantial knowledge and limited assessment pedagogical practice influence learners' outcome to a great extent. A prerequisite of quality in every educational system is to evaluate its progress. In the current climate, a quality of educational system depends upon many factors that professional teachers can be one of them. Literate teachers in assessment area can act appropriately in response to test results (Gotch, 2012; Yan & Cheng, 2015). Effective teacher education programs and professional development experiences are necessary parts of every educational system, especially the knowledge and skills needed to develop assessment tasks that would bring forth learners' creative mind or assess their growth and progress towards competence (Beziat & Coleman, 2015; Lingam & Lingam, 2016). It means that teachers' content knowledge is another significant factor that influences the quality of classroom content as well as classroom assessment. In other words, knowledgeable teachers can establish formative assessment through establishing learning goals, eliciting and interpreting evidence of learners' learning and providing effective and specific feedback (Herman et al., 2015; Bastian et al., 2016). Some factors other than teachers' assessment literacy, such as teaching experiences, educational system, time of instruction, and cultural point may influence both teachers' activities in classrooms and learners' achievements (Karimi & Shafee, 2014; Lingam & Lingam, 2016). It has been seen in the literature that the impact of assessment literacy or teacher substantial knowledge of assessment on teachers' pedagogical practices and learners' achievements is questionable; therefore, the present study investigated teachers' assessment literacy and its impact on their current assessment practices and learners' writing achievements. The findings of the present study might influence the process of teacher education program in general, and the order and the extent of presenting the content in particular. Commutation and modification in education programs eventuate in knowledgeable teachers who understand the complexity of the teaching context, especially international teaching context before entering those contexts. In this way, they would be prepared for the most appropriate assessment procedures to gather the required data and to reach more reliable and valid interpretations using universal and valid rubrics.

Research Questions

The following research questions were investigated in this experiment:

1. What are the differences between classroom practices of teachers with a high degree of assessment literacy and teachers with low degree of assessment literacy?
2. Is there a statistically significant difference in the learners' writing scores while controlling for their pretest on this test?

Methodology

Participants

To investigate the assessment literacy, the researchers administered Assessment Literacy Inventory (ALI) (A previously-validated inventory, Mertler & Campbell, 2005; see instrument section below to know more about this inventory) among 26 EFL instructors (available sample). Based on the results of the ALI, five instructors with the highest assessment literacy (*assessment literate instructors*) and five instructors with the lowest assessment literacy (*assessment illiterate instructors*) were selected for the study. All the instructors aged between 35 to 50 years, managed English writing courses in Islamic Azad University (IAU). These ten instructors had 75 students in their classrooms; therefore, 10 male EFL instructors and 75 male sophomores from Iranian EFL contexts were selected as the participants of the present study. All of the instructors accepted to participate in the study voluntarily. At the outset of the study, they were informed about the nature of the study. They were also ensured that their identity in the survey would be held in strict confidence and were allowed to withdraw their participation at any time without penalty. All of them had more than ten years of teaching experience and passed teacher training courses in TEFL. They had teaching experience in State University, Islamic Azad University, and Payame Noor University. There are different assessment procedures in these educational systems, and the participants of the study were familiar with these three systems. The learners who ranged from 20-27 years of age and were studying English writing course took part in this study. These learners studied writing English in ten classes; in five classes (35 learners) with instructors with high assessment literacy and five classes (40 learners) with instructors with low assessment literacy. As the researchers used same pretest and posttest for all students, and the differences among the classes were not the case in the study as well, for convenient analysis, the 35 learners of assessment literate instructors were considered as one group (Group 1, N= 35) and 40 students of the assessment illiterate instructors were considered as another group (Group 2, N= 40).

Instruments

This qualitative, quantitative, and exploratory study investigated the impacts of teachers' assessment literacy on learners' achievements during the implementation of 16 sessions of the writing course in one month through survey, non-participatory observation, semi-structured interviews, writing pretest, and writing posttest.

Assessment Literacy Inventory

A previously-validated inventory (Mertler & Campbell 2005) that addressed teachers' perception of classroom assessment was employed in this study. This inventory consists of two parts. Part I consists of items related to teachers' background as a classroom teacher and part II consists of 35 items related to the seven standards for teacher competence in the educational assessment of students. Some of the items are intended to measure general concepts related to testing and assessment, including the use of assessment activities for assigning student grades and communicating the results of assessment to students and parents; other items are related to knowledge of standardized testing, and the remaining items are related to classroom assessment.

Two sample questions of this inventory are presented below:

What is the **most** important consideration in choosing a method for assessing student achievement?

The ease of scoring the assessment

The ease of preparing the assessment

The accuracy of assessing whether or not instructional objectives were attained

The acceptance by the school administration

What is the **most** effective use a teacher can make of an assessment that requires students to show their work (e.g., the way they arrived at a solution to a problem or the logic used to arrive at a conclusion)?

Assigning grades for a unit of instruction on problem solving

Providing instructional feedback to individual students

Motivating students to attempt innovative ways to solve problems

None of the above

All of them were multi-choice items. The researchers evaluated teachers' assessment literacy based on their answers to the questions of this inventory.

Non-Participatory Observation

Non-participatory observation involves observing participants without active participation. This option is used to understand a phenomenon by entering the community or social system involved, while staying separate from the activities being observed (Liu & Maitlis, 2010). Triangulation of data helps researchers to reach a deep understanding of the phenomenon under investigation and find out the points and behaviors which are not elicited in the administration of the inventory and interviews. In addition, non-participatory observation sheds light on latent facts about teachers' actual practices in their classrooms. This process was conducted by one of the researchers of the current study. The researcher recorded all the information that was necessary for further analysis.

Semi-Structured Interview

The researchers conducted semi-structured interviews with ten EFL instructors to investigate in-depth information about instructors' perceptions of classroom assessment, and their assessment literacy. In these face-to-face interviews that were conducted in 30 minutes, the researchers began with lines of questioning and allowed the instructors to address other related

topics if they liked. The questions of interviews were about issues such as: Attitudes toward language assessment; benefits of employing classroom assessment in writing courses; challenges of conducting such a program; and learners' feelings and feedbacks about participating in such language environments. Some interview questions were as follow:

- What is your definition of assessment literacy?
- What is your opinion about conducting classroom-based assessment?
- What are the advantages and disadvantages of classroom-based assessment?
- What are the challenges of conducting classroom-based assessment?

Writing Competence Rating Scale (WCRS)

To examine the impact of teachers' assessment literacy on writing competency, the researchers employed WCRS in the current study that was developed by Conor and Mbaye (2002). To do this, members of the two groups (learners with *assessment literate instructors* (N=35) and learners with *assessment illiterate instructors* (N=40)) took pre-tests and post-tests (writing tests); the participants had to write a standard five paragraph essay about a subject. Then, the researchers developed an analytic rating scale to assess learners' writing competence. This scale addressed the writing content, organization, and accuracy of learners' essays. Face and construct validity of this scale were examined by three EFL experts. Then, two raters who scored learners' essays analytically rated learners' essays according to these three criteria; content, organization, and accuracy. Rating scores ranged from 1 (the lowest) to 4 (the highest). Inter-rater reliability was also verified before rating the learners' essays.

Procedures

To understand and investigate the latent aspects of assessment literacy and its impact on their assessment practices, the researchers needed to compare the practice and perception of AL of assessment literate teachers and assessment illiterate teachers. To do this, at the outset of the study, the researchers selected 26 EFL instructors (available sample) that taught writing skill course. Then, the researchers administered the assessment literacy inventory. Based on the results of this inventory, the researchers chose five instructors (Those who got the highest score from the inventory) with high assessment literacy (*assessment literate instructors*) and five instructors (Those who got the lowest score from the inventory) with low assessment literacy (*assessment illiterate instructors*) as the participants of the study (N=10). The instructors taught in ten writing classrooms. They had 75 EFL learners in their classrooms. As the researchers used same pretest and posttest for all students, and the differences among the classes were not the case in the study as well, for convenient analysis, the 35 learners of assessment literate instructors were considered as one group (Group 1, N= 35) and 40 students of the assessment illiterate instructors were considered as another group (Group 2, N= 40). To investigate the effect of teachers' assessment literacy on learners' outcomes, the researchers administered a writing pretest at the beginning of the study to determine learner's writing competence at the outset of the study and a writing posttest at the end of the study. The effects on content were controlled by teaching the same materials to the learners.

Non-participatory observation and semi-structured interviews were also employed to determine teachers' differences between their assessment literacy and classroom practices. The

quantitative data for the current study were the learners' responses to the pretest and posttest as well as the results of the inventory. These responses were entered into a data file and analyzed statistically using the Statistical Package for Social Sciences (SPSS), version 24. Preliminary Statistical analyses carried out on the data for choosing appropriate statistical procedure and better understanding the characteristics of them in the study. The qualitative data were all open-ended responses to the interviews and classroom observation. The procedure for analyzing qualitative data was as follows: Each data set was read several times to gain some sense of the main ideas being expressed. Then the data were coded and analyzed manually and subjectively.

Results and Discussions

Quantitative Data Analysis

The quantitative data of the current study were the scores of the two groups (35 learners of assessment literate instructors (Group 1, N= 35) and 40 students of the assessment illiterate instructors (Group 2, N= 40)) in writing pretest and posttest. To answer the second research question which needs quantitative data, the researchers conducted one way ANCOVA.

To explore the assumptions for a normal one-way analysis of variance that are called normality or homogeneity of variance, the researchers checked the specific assumptions associated with ANCOVA. The results of this analysis are presented in Table 1.

Dependent Variable: Posttest					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	29.828 ^a	3	9.943	19.963	.000
Intercept	60.883	1	60.883	122.241	.000
Groups	6.135	1	6.135	12.318	.001
Pretest	.265	1	.265	.532	.468
Groups * Pretest	.607	1	.607	1.220	.273
Error	32.872	66	.498		
Total	573.000	70			
Corrected Total	62.700	69			

a. R Squared = .476 (Adjusted R Squared = .452)

Table 1: Check for homogeneity of regression slopes

The results of Table 1 indicate that the significant level of interaction term which is revealed as (Groups * Pretest) is more than .05; therefore, it can be said that the researchers have not violated the assumption of homogeneity of regression slopes. Thus, ANCOVA analysis can run safely.

To explore teachers' assessment literacy and its impacts on learners' writing achievements, a one-way ANCOVA was employed to test writing scores in post-test while controlling for their pretest on this test. The following tables show the results of one-way ANCOVA.

Dependent Variable: Posttest			
F	df1	df2	Sig.
.108	1	68	.744

a. Design: Intercept + Pretest + Groups

Table 2: Levene's Test of Equality of Error Variances

The results in Table 2 show that the Sig. value is much larger than the cut-off of .05 which indicates the research does not violate the assumptions of equality of variance.

Dependent Variable: Posttest						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	29.221 ^a	2	14.610	29.239	.000	.466
Intercept	61.430	1	61.430	122.936	.000	.647
Pretest	.292	1	.292	.585	.447	.009
Groups	28.802	1	28.802	57.640	.000	.462
Error	33.479	67	.500			
Total	573.000	70				
Corrected Total	62.700	69				
a. R Squared = .466 (Adjusted R Squared = .450)						

Table 3. Tests of Between-Subjects Effects

Groups	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
High Literacy	3.342 ^a	.119	3.103	3.580
Low Literacy	2.058 ^a	.119	1.820	2.297

a. Covariates appearing in the model are evaluated at the following values: Pretest = 2.10.

Table 4. Estimated Marginal Means

A one-way between-groups analysis of covariance was conducted to investigate the effectiveness of assessment literacy on learners' outcomes. The independent variable was the type of groups (learners with assessment illiterate instructors and learners with assessment literate instructors), and the dependent variable consisted of scores on writing posttest. Learners' scores on the writing pretest were used as the covariate in this analysis. Preliminary checks were conducted to ensure that there was no violation of the assumptions of normality, linearity, homogeneity of variances, homogeneity of regression slopes, and reliable measurement of the covariate. After adjusting for the writing pretest scores, there was a statistically significant difference between the two intervention groups on writing posttest scores $F(1, 67) = 57.640$, $P = .00$, partial eta squared = .46 which is a large value.

Qualitative Data Analysis

Although inventories are among the most commonly used instruments, the data obtained through inventories may be one-dimensional. And, in order to obtain more trustworthy and reliable findings, triangulation of the data was observed. Data were gathered through non-participatory observations, semi-structured interviews, students' homework and assignments, and comments.

Interestingly, there were some differences between *assessment literate instructors* and *assessment illiterate instructors* in both their assessment conceptions and classroom assessment practices. The main themes of *assessment literate instructors'* conceptions about classroom assessment based on the results of semi-structured interviews were as follow (to make them anonymous, the researchers numbered the teachers in the interviews):

- “Assessment, particularly, formative assessment has a great improvement power, as it is intended to stimulate effective instructional programs in teachers and the most appropriate classroom techniques in learners.” (Teacher # 1), (Teacher # 2 said the same concept but in different words).
- “The main function of the formative assessment or dynamic classroom assessment is to supply educational evidence that will enhance the learners’ ability in language learning.” (Teacher # 3)
- Some cultural and contextual factors such as the relationship between teachers and students, parents’ expectations from teachers, and learners’ attitudes towards teacher as an authority in the classroom may influence teachers’ control over any aspect of language teaching; from teaching to assessment procedures. (Teacher # 4)
- “Having diverse learners and multitudinous language materials, the current education system demands that teachers have a repertoire of classroom assessment.” (Teacher # 4)
- “The main strategy to understand the effectiveness of classroom instruction is only possible through conducting classroom assessment. However, teachers’ ability in conducting such contexts is different.” (Teacher # 5) (Teacher # 1 said the same concept but in different words).
- “The only process, the process not product, of obtaining adequate information about learners, giving feedback to the learners about their strengths and weaknesses, and making educational decisions is through conducting classroom assessment.” (Teacher # 1)

The results of the interview demonstrated that those teachers who had assessment literacy emphasized the significant impact of assessment literacy on classroom instruction and classroom management. The researchers also speculated that their ability in classroom assessment might influence their attitudes towards the significance of conducting such a program in every classroom environment.

And the main themes of *assessment illiterate instructors’* conceptions of classroom assessment based on the results of semi-structured interviews were as follow:

- “The main obstacle in conducting classroom assessment is teachers’ limited time. In this limited time, teachers can just present their teaching content” (Teacher # 1).
Approximately, all of the instructors (both literate and illiterate) agreed that limited time is their main concerns in the educational system, but unlike the illiterate ones, assessment literate instructors stated that they can control this factor to some extent.
- “Fixed educational system, with standardized tests, close teachers’ hands in focusing on classroom assessment and other related techniques in their classrooms.” (Teacher # 2)
- “Educational content is not reflected on learners’ needs; therefore, learners’ involvement in classroom tasks is very limited. The main portion of the classroom is wasted to motivate learners to participate in classroom practices.” (Teacher # 2)
- “Classroom assessment poses anxiety to both teachers and learners. One of the reasons for assessment anxiety on the part of teachers is confusion about what assessment really means and what is its purpose. The main reason that assessment causes anxiety between learners is that they perceive assessment as a means of competing with their classmates. They think that they should fight for the highest grade instead of fight for increasing their knowledge and understanding.” (Teachers # 3), (Teacher # 1 and 4 said the same concept but in different words).

- “Teachers believe that standardized tests are not adequate for their particular learning contexts.” (Teacher # 4)
- “Teachers’ lack of motivation due to financial matters was another important concern. They believe that their wages are much less than their efforts in the classroom.” (Teacher # 5), (Teachers # 2 and 4 said the same concept but in different words)

Teachers with low degree of assessment literacy did not mention about their lack of the required skill to assess learners’ ability. Instead, they discussed about the challenges that they had to face in conducting classroom-based assessment. They talked as if they had a high degree of assessment literacy, but they faced some obstacles to follow their knowledge in their classrooms. It is consequently interesting that teachers with low degree of assessment literacy passed their responsibilities to environmental factors rather than their knowledge about assessment. This claim is perhaps related to the point that they had little theoretical knowledge about assessment and thought that these superficial theoretical knowledge would help them in the actual environment of classroom.

In addition to assessment literacy inventory that was employed to determine the participants of the study and semi-structured interview, non-participatory observation was also conducted. Non-participatory observation was conducted to compare the classroom practices of assessment literate and illiterate instructors. Two classes of literate instructors and two classes of illiterate instructors were observed by the researchers. The results of non-participatory observation indicated that in classrooms with literate instructors, the instructors evaluated the learners’ progress through short paragraphs or even very simple questions. After teaching several points, the instructors gave feedback to learners as an assessment activity and checked their progress. They chose their classroom topics considering the learners’ particular interests and needs. Three major features of assessment literate instructors’ classrooms were setting goals based on learners’ interest, dynamic assessment through classroom assignments, and giving feedback. Learners mailed their assignments to their teachers and received feedback. Tasks such as journal writing, probing questions, and observation may help instructors to understand the mental processes that learners engaged in as they write about their selected topics. Assessment literate instructors believed that the course content is flexible. There was an active interaction between instructors and learners. It was interesting that the teachers knew their learners completely; in some cases, they could predict that one or several particular learners cannot understand the point. After checking their comprehension, the researchers observed that the instructors’ guesses were right. This statement is not achievable unless by assessing the learners’ ability continually and dynamically. In contrast, in the classrooms with illiterate instructors, the instructors focused on conventional paper and pencil test at the end of the course. Assessment illiterate instructors followed just conventional instructional classrooms. They believed that the pre-planned language teaching methods and even classroom techniques are designed by experts in the field; therefore, teachers should not change the set curriculum and teach their pre-planned language content. In these classrooms, the teachers were the provider of the information and the learners were just receivers of the information without any active participation or even interaction. Learners had no control over the instruction of the classroom. And at the end of course, the instructors employed pre-planned methods and even topics to evaluate learners’ progress. Assessment illiterate instructors believed that course content is pre-planned and fixed. They only administered final term examination, therefore, they knew the learners’ strengths and weaknesses after the term. It was clear that unlike literate instructors, illiterate instructors did not know their learners. In addition, there was no interaction between instructors and learners over

the content and assessment procedure. The results of observations demonstrated that there is a significant difference between the classroom practices of assessment literate instructors and assessment illiterate instructors. The statements confirmed that instructors with low degree of assessment literacy intended to use traditional classroom activities; it means that due to lack of assessment knowledge they were not confident enough to experience new methods and pedagogical learning and assessment tasks and not flexible in choosing various activities, so there were not responsive to the learners' learning.

Discussions

As it can be observed in the current study, assessment illiterate instructors had limited knowledge about evaluation and classroom assessment. They were not taught how to effectively build an assessment system to interpret standardized tests and classroom assessments. The direct result of this low degree of knowledge is a chaos in the classroom. Teachers understand the drawbacks of the instruction and learners know their weaknesses just after the term, when they cannot obviate or even modify them. If teacher trainers cannot enhance teachers' assessment literacy in their teacher education programs, this feeble assessment system remains in constant trouble, and learners suffer the consequences. As illustrated in the literature, many factors such as professional teachers (Yan & Cheng, 2015), effective teacher education programs and professional development experiences (Beziat & Coleman, 2015), teachers' content knowledge (Herman et al., 2015), and other factors than teachers' assessment literacy such as teaching experiences, educational system, time of instruction, and cultural point (Karimi & Shafee, 2014) may influence both teachers' activities in the classrooms, learners' achievements, and the quality of educational systems. Literate teachers in assessment can act appropriately in response to test results and make the right decisions in the middle of the course, when they can work for the drawbacks of their own instruction and assessment system and learners' weaknesses. The literate teachers were confident enough to control the process of assessment and this confidence comes from two sources. Their positive attitudes toward formative and dynamic assessment and their pedagogical knowledge. Teachers' knowledge, especially the knowledge and skills needed to develop assessment tasks would help evaluating instruction and achievements. Knowledgeable teachers can establish formative assessment through establishing learning goals, eliciting and interpreting evidence of learners' learning and providing effective and specific feedback. Therefore, two important points should be considered by teacher trainers in teacher education programs. The first important point in every teacher education program is teachers' beliefs about that program. Teachers' beliefs about assessment determine their understandings to a high degree. Mellati et al. (2015) investigated the sources of teachers' pedagogical beliefs. They found that the beliefs are derived from many sources the two prominent ones are *Experienced Pedagogical Beliefs* (Beliefs that are derived from their experiences as learners and before the program) and *Educational Pedagogical Beliefs* (Beliefs which they have learned in the program). They stated that determining these beliefs is crucial for teacher trainers as these beliefs influence each other and the subsequent pedagogical practices. The second important point is teachers' knowledge. Teacher knowledge has two aspects; theoretical and pedagogical. It is teacher trainer's responsibility to focus on both aspects of teacher knowledge in the programs. Many teachers learned the theoretical knowledge very soon and overlooked the pedagogical one as they think it is unnecessary. Any significant improvement in educational outcomes requires building the capacity of the existing teachers. Qualified teachers enhance educational system's quality,

which eventuate in improvement of learners' learning and achievement. The findings of the current study also emphasized that teachers' assessment practices in their education programs enhance the quality of their teaching as well as the learner outcomes.

Wiliam and Thompson (2008) pointed out that teacher professional development is more effective when it:

- is related to the direct context in which the teachers operate,
- happens in sustainable and enduring courses rather than being in the form of sporadic one-day workshops, and
- happens in active and collective participation of teachers.

The findings of the current study indicated that three major features of assessment literate instructors' classrooms were setting goals based on learners' interest, dynamic assessment through classroom assignments, and giving feedback. In other words, language learners learn the language well, when the educational instruction follows their interests and consider their contextual differences in classroom assessment. This will not be achievable unless teacher education program be modified in terms of relevance, practicality, and comprehensibility. In accordance with Clark-Gareca (2016), the results indicated that teachers' lack of expertise in test construction and in using valid evaluation procedures creates intricate problems for teachers and learners. Despite an emphasis on classroom assessment for several years, the findings of the current study revealed that there are still some deficiencies in classroom assessment knowledge among Iranian EFL teachers. The findings highlighted the necessity of considering teacher assessment knowledge in teacher education programs. Teachers learn how to evaluate the effectiveness of instruction and learners' potential when they were taught the concepts practically. The findings of the interviews revealed that there are at least three reasons why assessment illiterate instructors did not use formative assessment in their classrooms. First, some teachers had limited knowledge of this kind of assessment (limited knowledge). Second, teachers felt they had not enough time to check learners' progress, strengths, and weaknesses through formative assessment (limited time). And third, teachers felt there was inefficient financial support (limited wage); therefore, teachers were not motivated enough to try out different forms of assessments in their classrooms. Although these are common complaints of the teachers, they imply that they are not prepared for the actual environment of the classroom. Teachers should be faced with the reality of classroom in the education programs when they are taught how to manage them, how to control them, and how to assess them.

Two main objectives of assessment practices are to determine the effectiveness of the teaching and learning processes and to find ways to enhance learners' outcomes. The results of quantitative data demonstrated that teachers' assessment literacy has a statistically significant impact on learners' writing achievements. Assessment knowledge provides teachers the required information about the effectiveness of their pedagogy and the curriculum materials. In addition, by interpreting the assessment results, skillful teachers can provide a deep and understandable information for parents and governments. Superficial knowledge about the assessment procedure may affect teachers' judgement and decisions that they make. Assessment literate teachers have a central role in learners' success. They can modify the instructions, the process of teaching, and even their instructional decisions continually to promote teaching and learning conditions. Unquestionably, teachers need support. However, some conditions should be set to support them efficiently. There should be a direct link between policy makers, stakeholders, teachers, and researchers, but before that, researchers and stakeholders should understand what exactly happens in the classroom. Without such kind of understanding, teacher education programs will

not be prepared adequately and will not meet the challenges teachers face in the classroom. Assessment literacy means the knowledge of any procedure that is used to obtain information about the learners' learning condition. Assessment literacy should be the central focus of teacher education programs to set established educational standards in learning environments.

Conclusions

The present study investigated teachers' assessment literacy and its impact on their current assessment practices and learners' writing outcomes. To reach this goal, triangulation of the data was observed. The results of the study demonstrated that instructors' assessment literacy has a significant impact on learners' writing ability. The findings also confirmed that there is a great difference between classroom practices of assessment literate instructors and assessment illiterate instructors. Assessment literate instructors often set their classroom activities based on three fundamental notions: setting goals based on learners' interests, dynamic assessment through classroom assignments, and giving feedback. In their interviews, some instructors stated that such active learning environments are the direct consequence of effective teacher education programs. Conversely, assessment illiterate instructors counted reasons other than a teacher education program for their failure in conducting formative assessment in the classroom. They stated that limited time and wages are the most important factors that demotivated them in their classrooms. They also asserted that lack of knowledge has influenced their decisions that they make. The findings highlighted the emphasis of teacher assessment literacy more effectively in teacher education programs. Teachers can learn how to evaluate the effectiveness of instruction and learners' practical and potential when they were taught these concepts practically. Practical and pedagogical aspects of teacher assessment should be focused on the programs; a way in which teachers can apply their theoretical knowledge about selecting the most suitable teaching and assessment methods for their particular environments, conducting prerequisite modifications, administering, scoring and interpreting the findings of teacher-produced assessment methods, making suitable decisions about individual learners and teaching process, and transferring assessment findings to learners, parents, other audiences in their actual classrooms.

Directions for Further Study

Assessment literacy has some subcategories such as knowledge of assessment purposes, content and methods, knowledge of grading, knowledge of feedback and error correction, knowledge of assessment interpretation and communication, knowledge of student involvement in assessment, and knowledge of assessment ethics. The interaction of these factors influences the output of teachers' assessment literacy. In-depth investigation of these factors is required to determine their influence and interaction with the teachers' general knowledge of assessment. Cultural points can act as another magnificent factor in supporting teachers to employ classroom assessment. Actually, culture is considered as a socially constructed practice and is different from context to context. The transmission of knowledge and new materials into learners' mind ties directly with their cultural identities. Perhaps adopting this vision and perception on language assessment and cultural points, researchers could consider the impact of cultural differences in their further studies. Despite the advances made about the notion of intercultural

and multicultural language, language still continues to be evaluated as a fixed system of formal structure; therefore, considering cultural factors can lead researchers and stakeholders to new directions of effective language assessment. Cultural characteristics of every teacher education program should be considered efficiently to obviate possible related educational problems. There are many factors other than teacher education programs such as teaching experiences, teaching context, and educational system that might influence teachers' assessment literacy. Further studies can shed light on these factors to add new and in-depth information about this subject matter.

References

- Alkharusi, H., Kazem, A. M., & Al-Musawai, A. (2011). Knowledge, skills, and attitudes of pre-service and in-service teachers in educational measurement. *Asia-Pacific Journal of Teacher Education*, 39(2), 113-123. <https://doi.org/10.1080/1359866X.2011.560649>
- Al-Malki, M. A. & Weir, K. (2014). A comparative analysis between the assessment criteria used to assess graduating teachers at Rustaq College (Oman) and Griffith University (Australia) during the teaching practicum. *Australian Journal of Teacher Education*, 39(12), 28-42. <https://doi.org/10.14221/ajte.2014v39n12.3>
- Bastian, K. C., Henry, G. T., Pan, Y., & Lys, D. (2016). Teacher candidate performance assessments: Local scoring and implications for teacher preparation program improvement. *Teaching and Teacher Education*, 59, 1-12. <http://dx.doi.org/10.1016/j.tate.2016.05.008>
- Bennett, R. (2011). Formative assessment: A critical review. *Assessment in Education: Principles, Policy & Practice*, 18, 5–25. <http://dx.doi.org/10.1080/0969594X.2010.513678>
- Beziat, T. L. R., & Coleman, B. K. (2015). Classroom assessment literacy: Evaluating pre-service teachers. *The Researcher*, 27(1), 25-30.
- Campbell, C., Murphy, J. A., & Holt, J. K. (2002). *Psychometric analysis of an assessment literacy instrument: Applicability to pre-service teachers*. Paper presented at the annual meeting of the Mid-Western Educational Research Association, Columbus, OH.
- Clark-Gareca, B. (2016). Classroom assessment and English Language Learners: Teachers' accommodations implementation on routine math and science tests. *Teaching and Teacher Education*, 54, 139-148. <http://dx.doi.org/10.1016/j.tate.2015.11.003>
- Conor, U. & Mbaye, A. (2002). Discourse approaches to writing assessment. *Annual Review of Applied Linguistics*, 22, 263-278. <https://doi.org/10.1017/S0267190502000144>
- Dayal, H. C. & Lingam, G. I. (2015). Fijian teachers' conceptions of assessment. *Australian Journal of Teacher Education*, 40(8), 43-58. <http://dx.doi.org/10.14221/ajte.2015v40n8.3>
- Dinther, M. V., Dochy, F., & Segers, M. (2015). The contribution of assessment experiences to student teachers' self-efficacy in competence-based education. *Teaching and Teacher Education*, 49, 45-55. <http://dx.doi.org/10.1016/j.tate.2015.02.013>
- Furtak, E., Ruiz-Primo, M., Shemwell, J., Ayala, C., Brandon, P., & Shavelson, R. (2008). On the fidelity of implementing embedded formative assessments and its relation to student learning. *Applied Measurement in Education*, 21, 360–389. <http://dx.doi.org/10.1080/08957340802347852>

- Gotch, C. M. (2012). *An investigation of teacher educational measurement literacy*. Unpublished Doctoral Dissertation, Washington State University, Washington.
- Herman, J., Osmundson, E., Dai, Y., Ringstaff, C., & Timms, M. (2015). Investigating the dynamics of formative assessment: relationships between teacher knowledge, assessment practice and learning. *Assessment in Education: Principles, Policy & Practice*, 22(3), 344-367. <http://dx.doi.org/10.1080/0969594X.2015.1006521>
- Karimi, M., & Shafee, Z. (2014). Iranian EFL teachers' perceptions of dynamic assessment: exploring the role of education and length of service. *Australian Journal of Teacher Education*, 39(8), 143-162. <http://dx.doi.org/10.14221/ajte.2014v39n8.10>
- Lingam, G. I., & Lingam, N. (2016). Developing school heads as instructional leaders in school-based assessment: challenges and next steps. *Australian Journal of Teacher Education*, 41(2), 91-105. <http://dx.doi.org/10.14221/ajte.2016v41n2.6>
- Liu, F., & Maitlis, S. (2010). Nonparticipant Observation. In Albert J. Mills, G. Durepos, & E. Wiebe (Eds.), *Encyclopedia of Case Study Research*. (pp. 610-612). Thousand Oaks, CA: SAGE Publications. Retrieved from: <http://srmo.sagepub.com/view/encyc-of-case-study-research/n229.xml>
- MacLellan, E. (2004). Initial knowledge states about assessment: novice teachers' conceptualisations. *Teaching and Teacher Education*, 20, 523-535. <https://doi.org/10.1016/j.tate.2004.04.008>
- McMillan, J. H. (2001). Secondary teachers' classroom assessment and grading practices. *Educational Measurement Issues and Practice*, 20(1), 20-32. <https://doi.org/10.1111/j.1745-3992.2001.tb00055.x>
- Mellati, M., Khademi, M., & Shirzad, A. (2015). The Relationships among sources of teacher pedagogical beliefs, teaching experiences, and student outcomes. *International Journal of Applied Linguistics & English Literature*, 4(2), 177-184. <http://dx.doi.org/10.7575/aiac.ijalel.v.4n.2p.177>
- Mertler, C. A. (2003). *Pre-service versus in-service teachers' Assessment literacy: Does classroom experience make a Difference?*. Paper presented at the Annual Meeting of the Mid-Western Educational Research Association, Columbus.
- Mertler, C. A., & Campbell, C. (2005). Measuring teachers' knowledge & application of classroom assessment concepts: Development of the "Assessment Literacy Inventory". *Online Submission*.
- Ogan-Bekiroglu, F., & Suzuk, E. (2014). Pre-service teachers' assessment literacy and its implementation into practice. *Curriculum Journal*, 25(3), 344-371. <https://doi.org/10.1080/09585176.2014.899916>
- Popham, W. J. (2009). Assessment literacy for teachers: faddish or fundamental?. *Theory Into Practice*, 48, 4-11. <https://doi.org/10.1080/00405840802577536>
- Razavipour, K., Riazi, A., & Rashidi, N. (2011). On the interaction of test washback and teacher assessment literacy: the case of Iranian EFL secondary school teachers. *English Language Teaching*, 4(1), 156-161.
- Scott, S., Webber, C. F., Aitken, N., & Lupart, J. (2011). Developing teachers' knowledge, beliefs, and expertise: Findings from the Alberta Student Assessment Study. *The Educational Forum*, 75(2), 96-113. <https://doi.org/10.1080/00131725.2011.552594>
- Stiggins, R. J. (2006). Assessment for learning: a key to student motivation and learning. *Phi Delta Kappa Edge*, 2(2), 1-19.

- Susuwele-Banda, W. J. (2005). *classroom assessment in malawi: teachers' perceptions and practices in mathematics*. Unpublished Doctoral Dissertation, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.
- Tong, S. A., & Adamson, B. (2015). Student voices in school-based assessment. *Australian Journal of Teacher Education*, 40(2), 15-28. <http://dx.doi.org/10.14221/ajte.2015v40n2.2>
- Verberg, C. P. M., Tigelaar, D. E. H., & Verloop, N. (2015). Negotiated assessment and teacher learning: An in-depth exploration. *Teaching and Teacher Education*, 49, 138-148. <http://dx.doi.org/10.1016/j.tate.2015.03.007>
- Wiliam, D., & Thompson, M. (2008). Integrating assessment with learning: What will it take to make it work? In C. A. Dwyer (Ed.), *The future of assessment*. New York: Lawrence Erlbaum Associates.
- Xu, Y. & Brown, G. T. L. (2016). Teacher assessment literacy in practice: A reconceptualization. *Teaching and Teacher Education*, 58, 149-162. <http://dx.doi.org/10.1016/j.tate.2016.05.010>
- Yan, Z. & Cheng, E. C. K. (2015). Primary teachers' attitudes, intentions and practices regarding formative assessment. *Teaching and Teacher Education*, 45, 128-136. <http://dx.doi.org/10.1016/j.tate.2014.10.002>
- Zhang, Q., Cown, P., Hayes, J., Werry, S., Barnes, R., France, L., & TeHau-Grant, R. (2015). Scrutinising the final judging role in assessment of practicum in early childhood initial teacher education in New Zealand. *Australian Journal of Teacher Education*, 40(10), 147-166. <http://dx.doi.org/10.14221/ajte.2015v40n10.9>